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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/849,523

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Yoshinori Uzuka

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EXAMINER

NINO, ADOLFO

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/849,523

Applicant(s)

UZUKA ET AL.

Examiner

Adolfo Nino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-20 is/are rejected.
- 7) ☒ Claim(s) 4-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Specification

The disclosure is objected to because of the following informalities:

Some of the paragraphs are repetitive (i.e. page 6, paragraphs 2 and 4 and page 8, last paragraph and page 13, first part of paragraph starting in line 16).

Page 11, Fig. 2(b) is not a view of the spacer.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 10-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wasserman (US 4,595,794).

Regarding claim 1, Wasserman discloses a spacer (1) for attaching onto a printed wiring board (3) to which is fixed an electronic component (2) having a component package, on one of whose surfaces a connection terminal (20, 30 in fig. 3) is arranged, said spacer (1) comprising an elastic member (1; col. 2, lines 40-42) with no ends thereof (fig. 1), said elastic member (1) being adapted to be detachably attached to the printed wiring board in such a way as to enclose the electronic component to seal a gap between the electronic component and the printed wiring board and said elastic member being adapted to be attached to and detached from the printed wiring board by

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exploiting elastic deformation of said elastic member. **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Regarding claim 2, Wasserman discloses a spacer (1) as set forth in claim 1, wherein said elastic member (1) has a frame-like shape (fig. 1) with an inner outline which is similar in shape to an outline of the component package (fig. 1), and is smaller in length than the outline of the component package (fig. 3), and is thinner than the gap between the electronic component and the printed wiring board (fig. 3).

Regarding claim 3, Wasserman discloses a spacer (1) as set forth in claim 1, wherein said elastic member (1) has a frame-like shape with an inner outline which is similar in shape and length to an outline of the component package (fig. 3) and is thinner than the gap between the electronic component and the printed wiring board (fig. 3), and wherein the frame-like shape has a pair of hook portions (102; 1031) for projecting into the gap between the electronic component and the printed wiring board (figs. 1, 3), the hook portions (102; 1031) being provided on the inner outline of the frame-like shape to oppose to each other.

Regarding claim 10, Wasserman discloses a spacer (1) as set forth in claim 1, wherein said elastic member (1), while in contact with the printed wiring board (3), is attached around the component package by pressure due to the elastic deformation of said elastic member (fig. 3).

Regarding claim 11, Wasserman discloses a spacer (1) as set forth in claim 10, wherein said elastic member (1) has a cross-sectional shape with a projecting portion (101; fig. 1) thereof, which projects into the gap between the electric component and the printed wiring board when said elastic member is attached to the printed wiring board (fig. 3).

Regarding claim 12, Wasserman discloses a spacer (1) as set forth in claim 1, wherein said elastic member (1) has a frame-like shape with an inner outline which is similar in shape to an outline of the component package (fig. 1), and said elastic member (1), while in contact with the printed wiring board (fig. 3), is attached around the component package by pressure due to the elastic deformation of said elastic member (fig. 3), and wherein the frame-like shape has a catch protrusion (101) on its inner outline (fig. 1), which catch protrusion is adapted to protrude into the gap between the electronic component and the printed wiring board. **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Regarding claim 13, Wasserman discloses a printed circuit board (3), comprising: an electronic component (2) having a component package (2), on one of whose surfaces a connection terminal is arranged (fig. 3); a printed wiring board (3) to which said electronic component (3) is fixed; and a spacer (1) formed as an elastic member (1; col. 2, lines 40-42) with no ends thereof detachably attached to said printed wiring board in such a way as to enclose said electronic component to seal a gap between said

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electronic component and said printed wiring board (fig. 3), said elastic member (1) being adapted to be attached to and detached from said printed wiring board by exploiting elastic deformation of the elastic member. **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Regarding claim 14, Wasserman discloses a printed circuit board (3) as set forth in claim 13, wherein the elastic member (1) has a frame-like shape (fig. 1) with an inner outline which is similar in shape to an outline of the component package (fig. 1), and is smaller in length than the outline of the component package, and is thinner than the gap between the electronic component and said printed wiring board (fig. 3).

Regarding claim 15, Wasserman discloses a printed circuit board (3) as set forth in claim 13, wherein the elastic member (1), while in contact with said printed wiring board (fig.3), is attached around the component package by pressure due to the elastic deformation of the elastic member fig. 3).

Regarding claim 16, Wasserman discloses a printed circuit board (3) as set forth in claim 13, wherein the elastic member (1) has a frame-like shape with an inner outline which is similar in shape to an outline of the component package (fig. 1), and the elastic member (1), while in contact with said printed wiring board, is attached around the component package by pressure due to the elastic deformation of the elastic member (fig. 3), and wherein the frame-like shape has a catch protrusion (101) on its inner outline, which, catch protrusion (101) is adapted to protrude into the gap between the

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electronic component and said printed wiring board (fig. 3). **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Regarding claim 17, Wasserman discloses an electronic equipment (figs. 1-3), comprising a printed circuit board (3) which includes: an electronic component (2) having a component package, on one of whose surfaces a connection terminal is arranged; a printed wiring board (3) to which the electronic component is fixed (fig. 3); and a spacer (1) formed as an elastic member (1; col. 2, lines 40-42) with no ends thereof detachably attached to the printed wiring board in such a way as to enclose the electronic component to seal a gap between the electronic component and the printed wiring board (fig. 3), the elastic member (1) being adapted to be attached to and detached from the printed wiring board by exploiting elastic deformation of the elastic member. **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Regarding claim 18, Wasserman discloses an electronic equipment as set forth in claim 17, wherein the elastic member (1) has a frame-like shape with an inner outline which is similar in shape to an outline of the component package (fig. 1), and is smaller in length than the outline of the component package (fig. 3), and is thinner than the gap between the electronic component and the printed wiring board (fig. 3).

Regarding claim 19, Wasserman discloses an electronic equipment as set forth in claim 17, wherein the elastic member (1), while in contact with the printed wiring board, is attached around the component package by pressure due to the elastic deformation of said elastic member (fig. 3).

Regarding claim 20, Wasserman discloses an electronic equipment as set forth in claim 17, wherein the elastic member (1) has a frame-like shape (fig. 1) with an inner outline which is similar in shape to an outline of the component package, and the elastic member (1), while in contact with the printed wiring board, is attached around the component package by pressure due to the elastic deformation of the elastic member (fig. 3), and wherein the frame-like shape has a catch protrusion (101) on its inner outline, which catch protrusion is adapted to protrude into the gap between the electronic component and the printed wiring board. **Note** that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re. Hutchison*, 69 USPQ 138.

Allowable Subject Matter

Claims 4-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art does not disclose, teach or suggest, alone or in combination,

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the combination therein of "wherein the frame-like shape has an outer outline greater in length than the outline of the component package, and wherein the frame-like shape has at least one slit thereon extending from the inner outline toward the outer outline of the frame-like shape" (this combination found in claims 4 and 5).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyoshi (US 5,895,970) discloses an elastic mounting structure. Huffman (US 4,480,289) discloses a support member. Pendse (US 5,528,462) discloses a direct chip connection. Hirai (US 5,381,316) discloses an electronic part assembly. Ghosh et al. (US 5,745,985) disclose a method of attaching a semiconductor to a circuit board. Dolbear (US 5,926,371) discloses a heat transfer apparatus. Broglia et al. (US 6,493,240 B2) disclose an interposer assembly. Maeta et al. (US 5,677,246) disclose a resin-sealed package structure. Uchida et al. (US 5,684,677) disclose an electronic circuit device. Sundstrom (US 5,764,498) discloses an electronic assembly. Miyazaki et al. (US 6,020,809) disclose a mounting structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolfo Nino whose telephone number is (571) 272-1981. The examiner can normally be reached on M-F (7:30-5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A Reichard can be reached on (571) 272-2800 ext. 31. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AN

 10/14/04
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